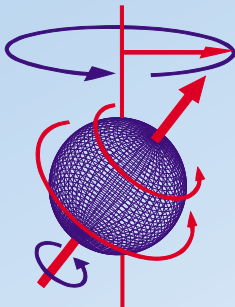


MagnetVision 1920-47-3D



18121 Parthenia Street
Northridge, California 91325, USA
+1 (818) 882-1997
+1 (800) 428-MRTV
www.mrvideo.com

Innovative MRI-Compatible Entertainment Systems

Table of Contents

1. Introduction	1
2. Safety Information	2
2.1. Important Warnings for Patient and Operator Safety	2
2.2. Precautionary Patient Conditions	2
2.3. Use Restrictions	3
2.4. MRI Environment Hazards	3
2.5. General Warnings for Electronic Products	4
2.6. Labeling Used to Indicate Device Safety	4
3. Installation Materials	6
4. Room Layout Overview for Installation	8
5. Installation Procedure	10
5.1. Stand Assembly	10
5.2. Mounting the Monitor to the Stand	11
5.3. Installing the MR Laser Link Cable	12
5.4. Component Interconnection	12
6. Operation	14
6.1. Rear panel controls	14
6.2. Remote control	15
6.3. Maintenance & Cleaning	17
7. Specifications	18
7.1. Dimensions	18
7.2. Panel Specifications	19
7.3. 3D Features	19
7.4. A/V Inputs	19
7.5. Power	19
8. Troubleshooting & Support Information	20

Notice:

This document contains proprietary information protected by copyright. All rights reserved.

No part of the document may be photocopied or reproduced without the prior written consent of Resonance Technology, Inc.

1. Introduction

Congratulations on your purchase of the MagnetVision system for patient comfort. We are confident this product will give you the tools you need for comforting the patient while undergoing MRI scans.

This installation/operation manual outlines how to properly install and operate the system.

Thank you for choosing to purchase this system from Resonance Technology, Inc., the leader in fMRI and MRI patient comfort systems.

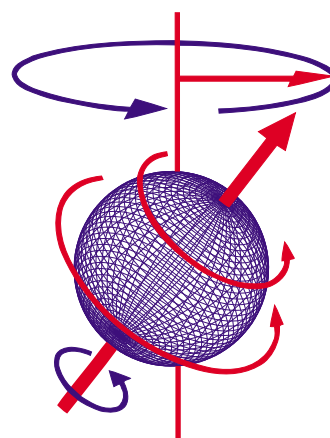
Suggestions on how to improve this system are always welcome.



Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Ziarati', with a large, sweeping loop above it.

Mokhtar Ziarati
President and CEO
Resonance Technology, Inc.



2. Safety Information

At Resonance Technology, Inc., patient safety is our top priority. Please review this section completely as its contents are vital to the safety of the installer, the clinician/operator, and the patient.

2.1. Important Warnings for Patient and Operator Safety

WARNING

Prior to every use, inspect all system components that come in contact with the patient. Discontinue product usage immediately if any damage is evident or presents other potential hazards. Use of damaged components may cause injury to the clinician or the patient.

Examples of hazardous damage include but is not limited to the following:

- Physical damage to passive 3D glasses
- Physical damage to monitor housing or stand
- Hardware missing from stand
- Any damage potentially exposing wires to the patient

2.2. Precautionary Patient Conditions

Eye Disease / Eye Injury / Glaucoma

If the patient has been diagnosed with or is susceptible to eye disease, eye injuries, or glaucoma, instruct the patient to consult their doctor before using the video glasses. Use of this product by individuals with conditions such as glaucoma is not recommended.

Heart Disease / High Blood Pressure

If the patient has a history of heart disease or high blood pressure, instruct the patient to consult their doctor before using this system. If during viewing any increased anxiety is experienced, stop using this product immediately and instruct the patient to rest. If the symptoms persist after resting, instruct the patient to consult their doctor before continuing using this product.

Seizures

If the patient has a history of temporary spasms, unconsciousness, or epileptic seizures from light stimulation, instruct the patient to consult their doctor before using this system. Use of this product by such individuals may cause spasms, unconsciousness, or seizures. If the patient experiences such symptoms, stop using the product immediately and instruct the patient to consult their doctor.

Sickness / Headache / Nausea

If during use, the patient experiences any of the following symptoms, stop using this product immediately and rest. These symptoms may indicate misuse or overuse of the product or that you should not use the product for health reasons. If the following symptoms persist after rest, consult your doctor.

- Sore eyes, eye fatigue, or double vision
- Headache
- Inability to focus on the screen
- Stiff or sore shoulders or neck

For patient safety, the patient video goggles turn off automatically after six hours of continuous use. Read this user manual for instructions on how to reset the video goggles to continue viewing video images.

Motion Sickness from using the Passive 3D Video Glasses

Some patients may experience motion sickness, headache, or nausea from viewing visual paradigms or video programs, especially those with intense action and movement. If the patient experiences any of these symptoms, stop using the product immediately. To avoid personal injury or injury to others, do not operate a motor vehicle nor do anything that requires concentration until these symptoms disappear.

2.3. Use Restrictions

Shelf-Life and System Maintenance Service Schedule

The MagnetVision System comes with a one year original manufacturer warranty and a shelf life of two years from the date of installation. Optional extended warranty may be purchased for this system. With patient safety in mind, Resonance Technology, Inc. recommends periodic maintenance service for this MagnetVision System every six months after the one year original warranty period.

Restrictions on Using Non-Resonance Technology, Inc. Components with the CinemaVision system

The original manufacturer's warranty will be voided if other non-Resonance Technology, Inc.-approved components are connected to the MagnetVision system. In addition, Resonance Technology, Inc. cannot be held responsible or liable for any unauthorized use of this equipment. If you have any questions about how to operate this system, please read this user manual or call Resonance Technology, Inc. customer service at (818) 882-1997 or email support@mrivideo.com.

2.4. MRI Environment Hazards

Installation of materials inside the MRI suite must be done with extreme caution and only by authorized personnel. Care must be taken to keep ferromagnetic materials such as tools, filter plates, screws, etc. at least three meters (approximately 10 feet) away from the energized magnet. Absolutely no work should be done near the filter panel when a scan is in progress.

All cabling inside the MRI environment should either be connected or terminated properly. Failure to do so may result in skin burns related to RF energy. All cables should be run straight and never looped, as this may also cause serious skin burns inside the MRI room.

In addition, no persons with ferromagnetic prosthetic devices such as pacemakers or joint replacements should enter the MRI suite at any time. Extremely high magnetic forces have the potential to dislodge ferrous items at high velocities that can result in serious injury or death.

Only system components explicitly designated for use in the MRI suite should be placed inside the MRI suite. Components not designated for use inside the MRI suite may present a projectile hazard and can become airborne, causing property damage, serious bodily injury, or death. Please refer to the installation block diagram to determine which components belong inside the MRI suite.

Resonance Technology, Inc. will not be held liable for any injuries or property damage which may occur as the result of improper use or installation of this product. By agreeing to this notice, users certify that they are familiar with basic safety procedures in an MRI room environment and that they have read and understand these safety precautions.

For questions regarding installation procedures or this manual, Resonance Technology, Inc. technical support staff may be reached Monday through Friday 8 a.m. to 5 p.m., Pacific Standard Time at (818) 882-1997, or by email at support@mrivideo.com.

2.5. General Warnings for Electronic Products

Electric shock

Failure to observe all operating and maintenance instructions may cause damage to this product and may result in property damage and/or injury or death from electric shock, fire, or other cause.

Do not disassemble this product.

Only Resonance Technology, Inc. trained and authorized personnel should perform all required service for this product. Failure to comply with this warning may result in property damage, injury and/or death from electric shock, fire, or other cause.

Avoid exposing this product to extreme environments.

This product may be damaged by high temperatures, direct sunlight exposure, by dropping this product, or by other mechanical shock. Do not expose this product to rain or excessive moisture. Avoid these conditions as the passive video glasses may become damaged and may result in eye fatigue to the patient.

Unplug this product when not in use for long periods of time.

Always unplug this product when not in use for extended periods of time or during MRI maintenance. Leave connected if used daily. In addition, to prolong the life of the video goggle, use the Technologist Remote to turn off the power to the video goggle at night or when not in use. Note that if the system is not used for 2 hours, it will hibernate and you may have to press the Tech Remote TALK button to wake up the system.

2.6. Labeling Used to Indicate Device Safety



Type BF Applied Part

Devices that have conductive contact with the patient or have applied parts that are fixed in medium or long term contact with the patient.



MR-Safe Device

Device considered **safe** for use anywhere inside the magnet room.



MR Conditionally-Safe Device

Device considered **safe** in the MR room **under certain conditions**.



MR Unsafe Device

Device considered **unsafe** for use in the MR room. These items should not be taken inside the MR room due to being a projectile hazard in the magnetic field.

3. Installation Materials

Your CinemaVision system comes complete with all the necessary components to complete the system installation at your facility. The following checklist is provided for materials verification purposes:

Part Number	Quantity	Photo	Description
RTC-400-033-774-001	1		MagnetVision Monitor
RTC-400-033-xxx-000	1		Monitor Stand
RTC-400-033-741-002	1		Stand bracket kit with VESA 400x400 Plate
ST-FOHD-SC50	1		HDMI Fiber-Optic transmitter
FIBER-S-SCSC-50-50m	1		SC Fiber-optic cable, 50 meters
RTC-MV47	1		MagetVision Installation/Operation Manual (This manual)
RTC-101-306-003	1		Hospital Grade AC power cord
RTC-ALS-HGC	1		(Optional) European Hospital Grade Power cord
RTC-400-150-003-000	1		Passive 3D Glasses

3

Installation Materials

The following list shows the rooms where the items are to be installed.

Part Number	Quantity	Description
ST-FOHD-SC50	1	Outside the Magnet Room: In the technologist room or near the penetration panel HDMI Fiber-Optic transmitter
RTC-400-033-774-001	1	Inside the Magnet Room: MagnetVision Monitor
RTC-400-033-xxx-000	1	Monitor Stand
RTC-400-033-741-002	1	Stand bracket kit with VESA 400x400 Plate
RTC-101-306-003	1	Hospital Grade AC power cord
RTC-ALS-HGC	1	(Optional) European Hospital Grade Power cord
RTC-400-150-003-000	1	Passive 3D Glasses

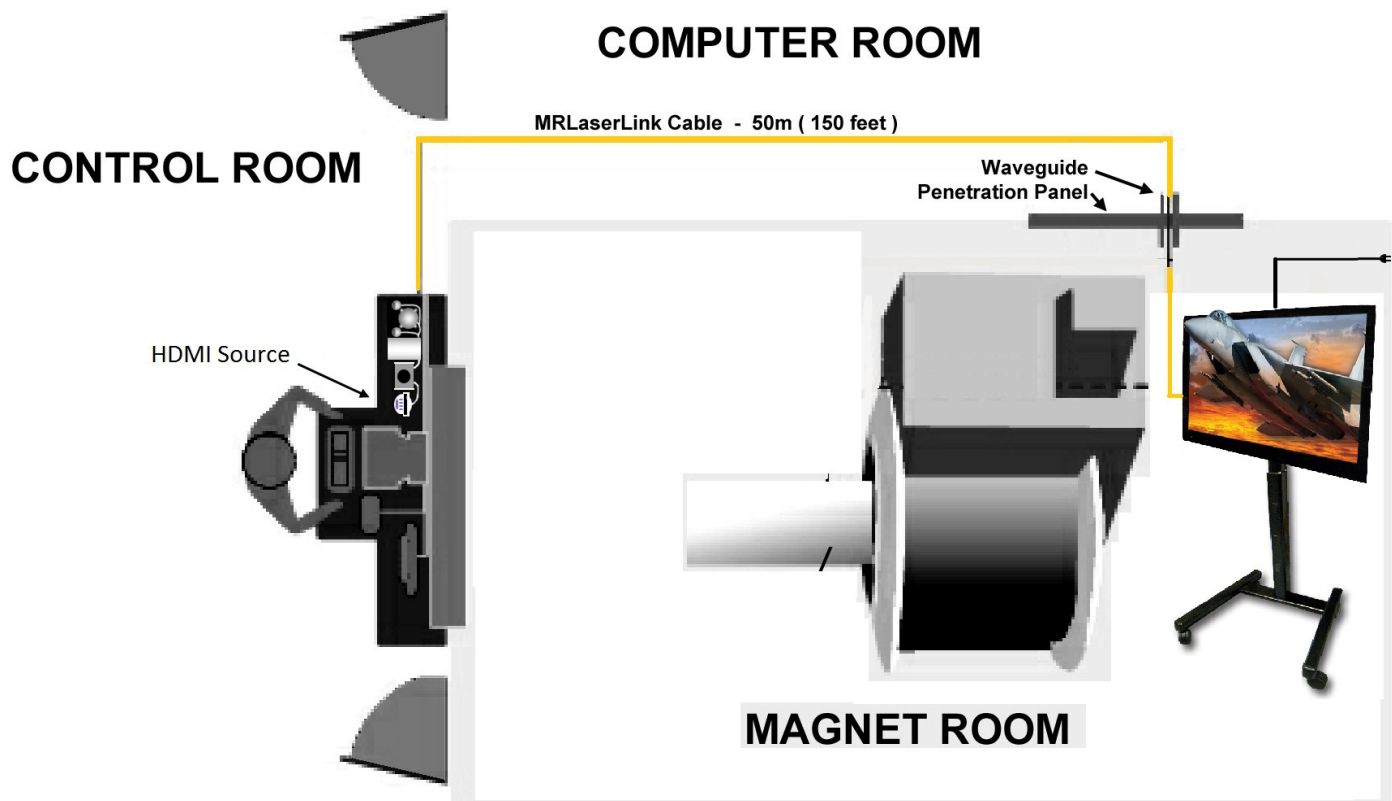
4 Room Layout Overview for Installation

4. Room Layout Overview for Installation

WARNING: Absolutely no ferromagnetic tools should be brought inside the MRI Suite!

While no tools, other than tie wraps, are required to install the system in the MRI suite, absolutely all ferromagnetic tools remain outside of, and away from the door leading to, the MRI suite.

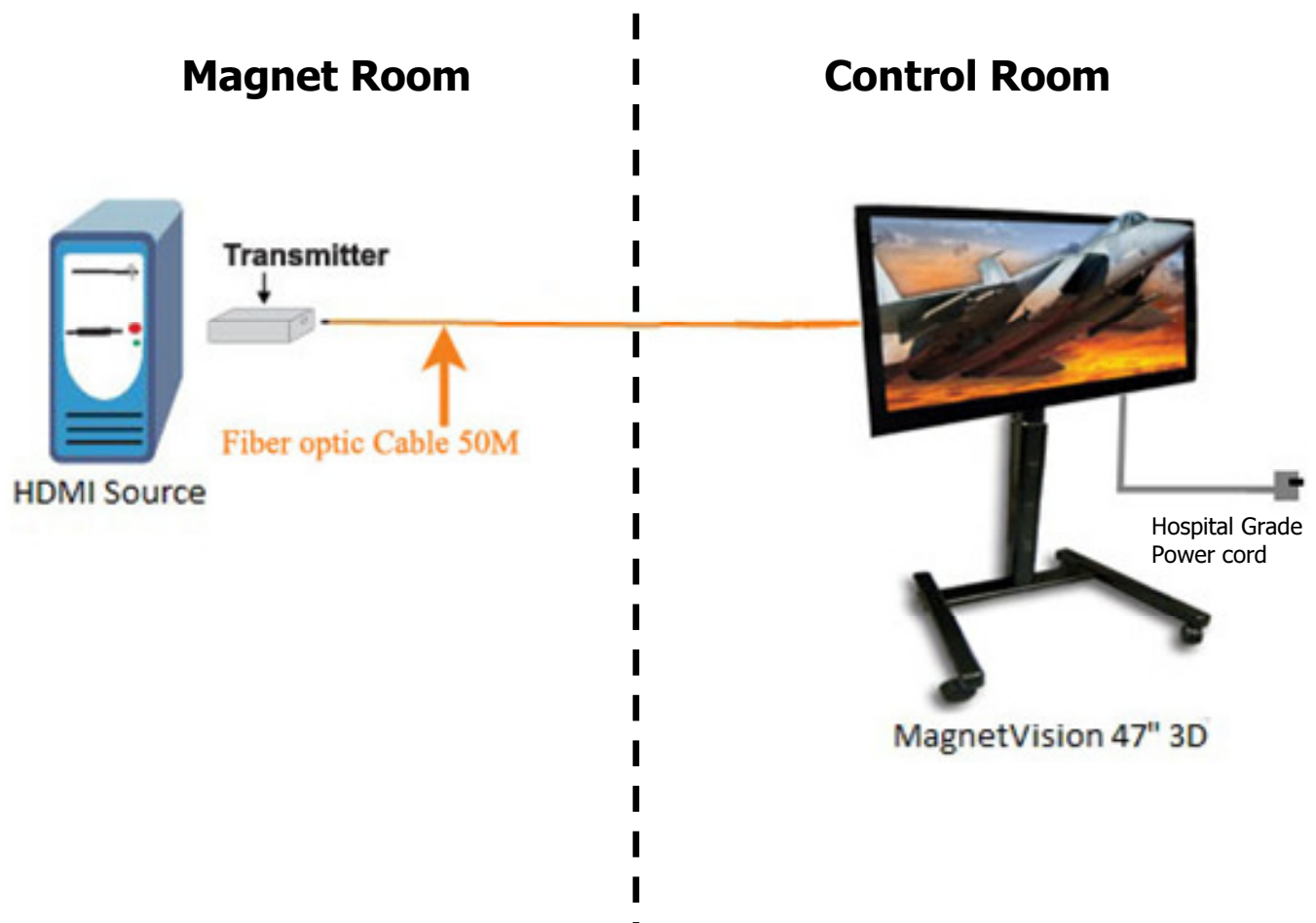
Below is a typical MRI setup. Your individual installation may vary somewhat, but it will generally be spaced into three areas: Control Room, Computer/Equipment Room and MRI Suite or Magnet Room.



The Control room setup consists of plugging in the HDMI fiber-optic transmitter to an HDMI video source such as a computer, laptop, DVD player, or satellite receiver.

The Magnet room setup includes a single Laser Link cable that will be connected from the HDMI fiber-optic transmitter through the filter panel wave-guide to the MagnetVision Monitor in the Magnet Room. Using a standard hospital-grade AC power cord, the monitor is plugged into a standard filtered AC outlet located in the magnet room. The monitor is placed beyond the end of the bore such that the patient has a view of the entire screen while inside the bore. Typically, such placement would be along the wall behind the magnet.

4 Room Layout Overview for Installation



5. Installation Procedure

The installation procedure consists of four major phases:

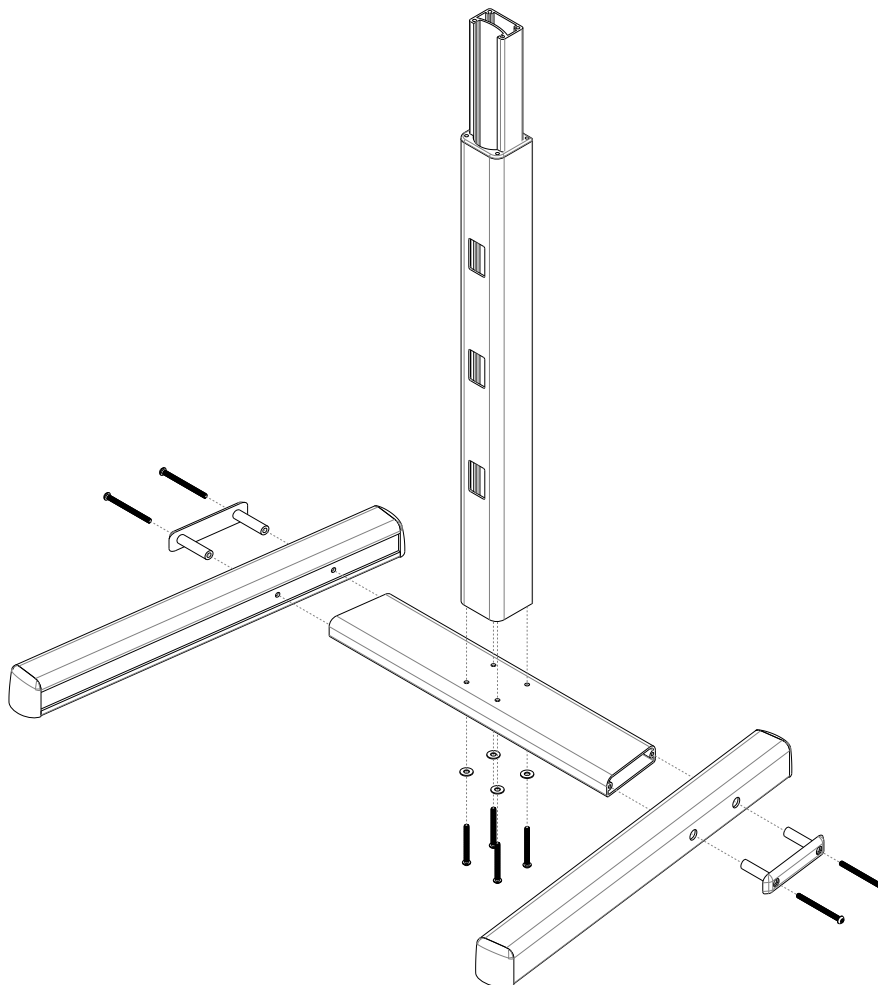
- Stand assembly
- Mounting the monitor to the stand
- Installing the MR Laser Link Cable
- Component connections

Before you begin the installation, determine the location where the monitor will be set up. It should be a sufficient distance from the magnet such that a patient has an unobstructed view of the entire screen. This is typically next to the wall behind the magnet.

5.1. Stand Assembly

Locate the parts of the stand. These will be the base, two legs with leveling feet, the adjustable center pole, and hardware. For safety, please perform this assembly procedure outside the magnet room.

- 5.1.1.** Using the (4) 3-inch screws and (4) flat washers provided, attach the adjustable pole to the base using the provided allen wrench. Please note the correct orientation as shown in the diagram below.
- 5.1.2.** Using the (4) 4-inch screws and plastic guides, attach the legs to the base. Please note the correct orientation as shown in the diagram below.



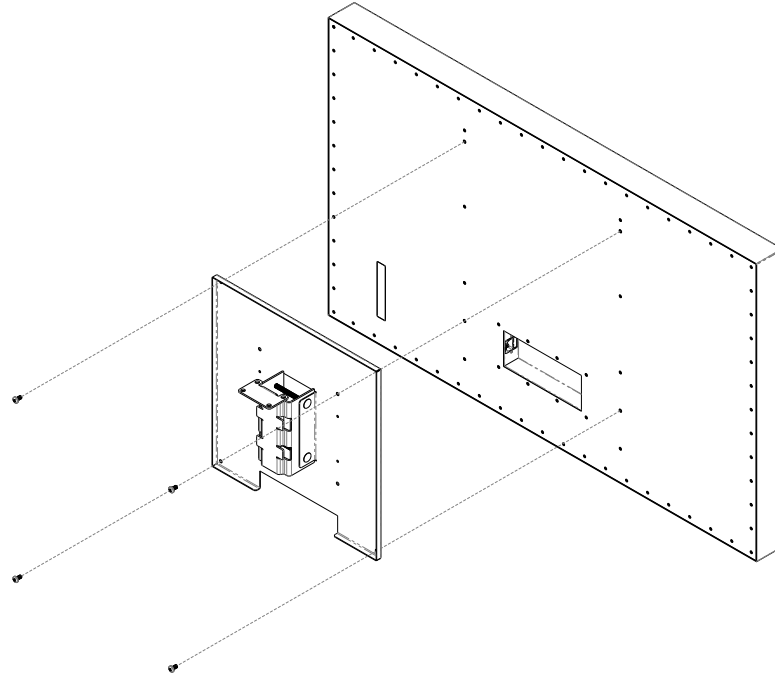
5

Installation Procedure

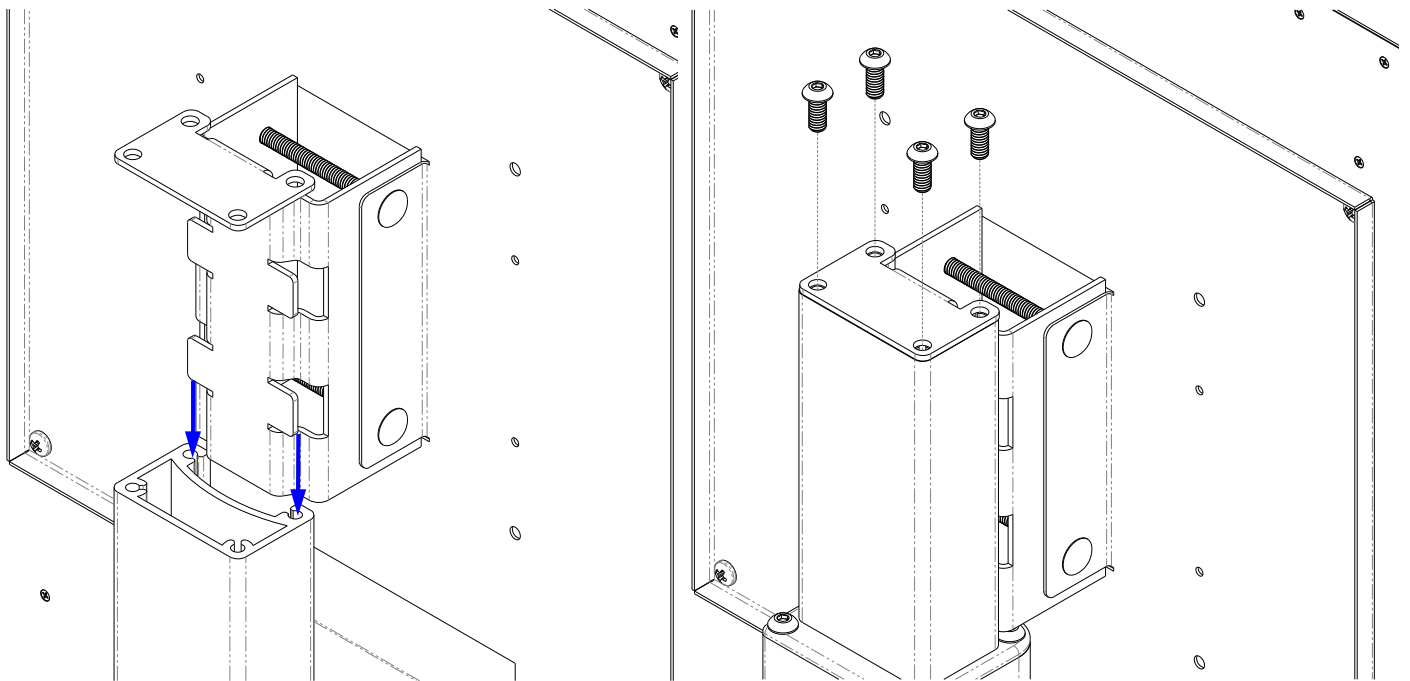
5.2. Mounting the Monitor to the Stand

Please ensure the display screen is protected during all steps of this assembly procedure.

5.2.1. Using the (4) M6 screws, attach the mounting plate assembly to the rear of the monitor.



5.2.2. Due to the weight of the monitor, this step must be performed by at least two people. Using three people to assist with this step is highly recommended: two to lift the monitor and one to guide it onto the stand. Lift the monitor and align the tabs along the sides of the mounting bracket with the slots in the center pole of the stand. Gently lower the assembly onto the center pole.



5.2.3. With someone still supporting the weight of the stand to aid with screw alignment, secure the bracket to the stand using the (4) 3/4-inch button-head screws provided and the allen wrench.

5

Installation Procedure

5.3. Installing the MR Laser Link Cable

The preferred method of routing the fiber optic cable is to run the cable from the control room through the overhead ceiling drop tiles and down into the computer room in front of the filter panel through the Fiber Optics Waveguide. It can then be run alongside the other MRI cables going to the magnet, and finally to the stand. The cable should end with enough slack to be run inside the stand up to the mating connector on the rear of the monitor.

Note: Care must be taken to ensure the cable is not bent in radius of less than 15cm (6 inches) or damage to the optical fibers will occur.



The exact routing of the fiber-optic cable will vary somewhat depending on the facility layout and the magnet type.

While using the fiber optic cable is the preferred option, alternatively a long, shielded VGA or HDMI cable could be used. Cables may be routed inside the stand using the cable access openings provided.

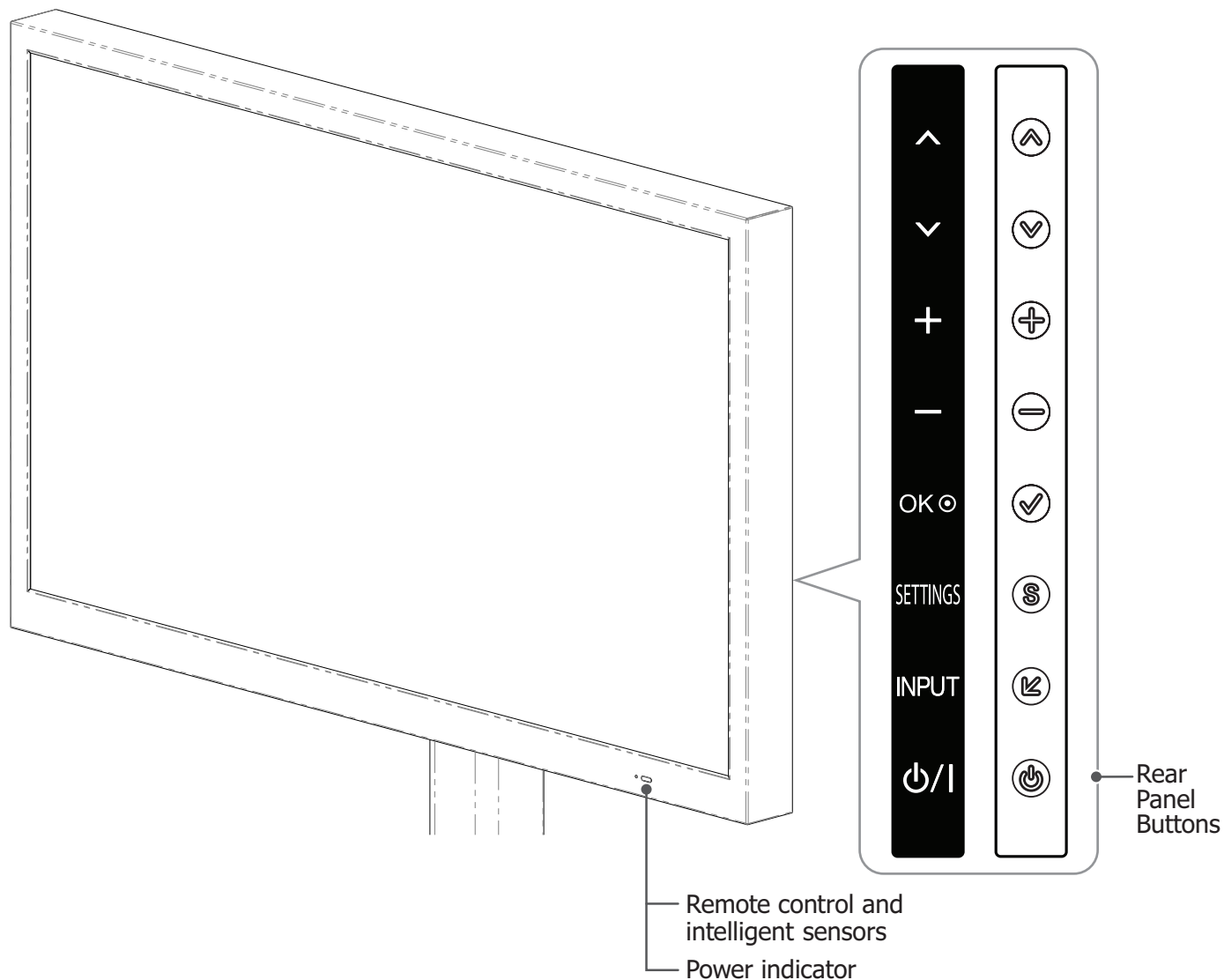
5.4. Component Interconnection

- 5.4.1.** Connect the fiber optic, VGA, or HDMI cable to the rear panel connector of the monitor.
- 5.4.2.** Connect the hospital-grade power cord to the rear panel of the monitor, and plug into the nearest filtered AC outlet. The power cable may be concealed inside the stand using the cable access openings provided.
- 5.4.3.** In the control room, connect the other end of the signal cable (fiber optic, VGA, or HDMI) to the video source. If using the fiber optic cable, connect it to the HDMI fiber optic transmitter and connect the transmitter to an HDMI video source.



6. Operation

6.1. Rear panel controls

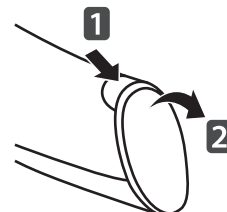


Button	Description
▲ / ▼	Scrolls through the saved channels.
⊕ / ⊖	Choose menu item.
✓ (OK ●)	Selects the highlighted menu option or confirms an input.
S (SETTINGS)	Accesses the main menus, or saves your input and exits the menus.
I (INPUT)	Changes the input source.
⏻ (POWER)	Turns the power on or off.

6.2. Remote control

Magic Remote Control Functions

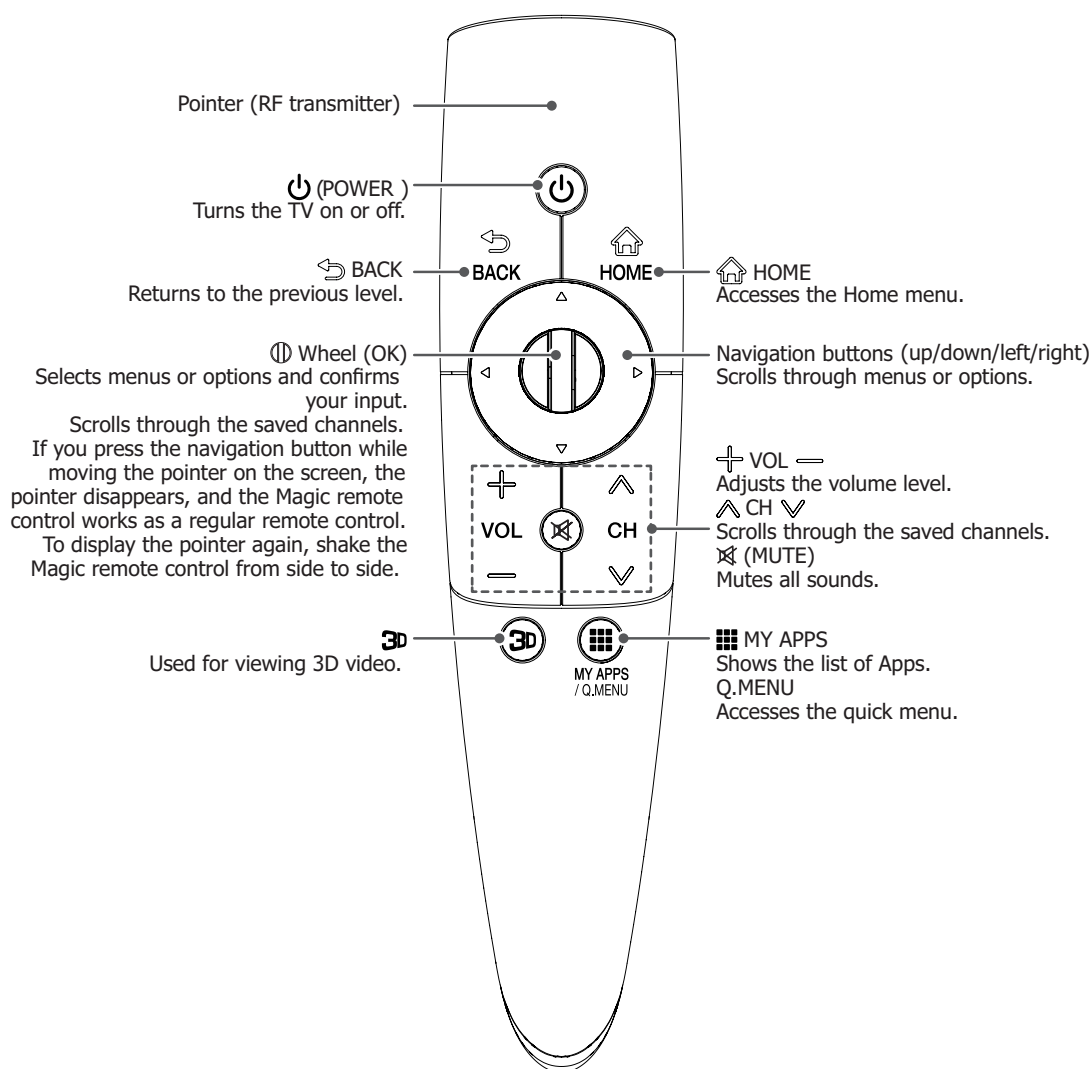
When the message "Magic remote control battery is low. Change the battery." is displayed, replace the battery. To replace batteries, open the battery cover, replace batteries (1.5 V AA) matching ⊕ and ⊖ ends to the label inside the compartment, and close the battery cover. Be sure to point the remote control at the remote control sensor on the TV. To remove the batteries, perform the installation actions in reverse.



CAUTION

Do not mix old and new batteries, as this may damage the remote control.

Make sure to point the remote control at the remote control sensor on the TV.



Registering Magic Remote Control

The Magic Remote Control operates by pairing with your TV.

Once you purchased the TV, please register the Magic remote control as follows;

How to register the Magic Remote Control

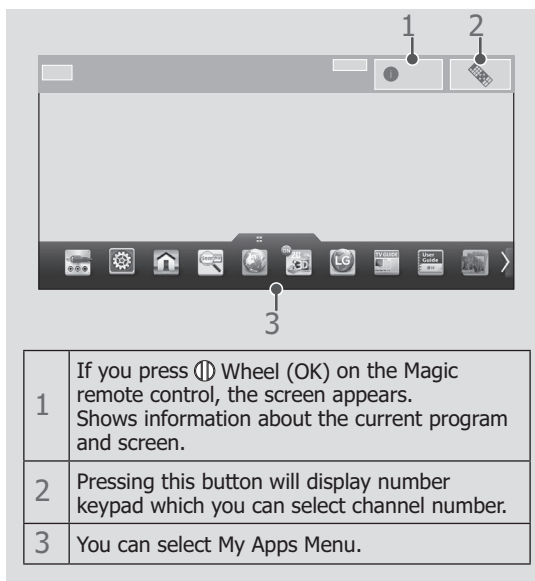
 (Wheel)	To register automatically, turn the TV on and press the (Wheel) (OK). When registration is completed, the completion message appears on the screen. If registration fails, turn the TV off and back on, then press the (Wheel) (OK) to complete registration.
--	--

How to Re-register the Magic Remote Control

 BACK  HOME	1 Press and hold the BACK and HOME buttons together for 5 seconds to reset, then register it by following "How to register the Magic remote control" above. 2 To re-register the Magic remote control, press and hold the BACK button for 5 seconds toward the TV.
--	---

How to use Magic Remote Control

	1 You can move the pointer by aiming the Pointer Receiver of the remote control at your TV then move it left, right, up or down. » If the pointer does not work properly leave the remote control for 10 seconds then use it again. 2 If the pointer disappears, move the remote control slightly to left or right. Then, it will automatically appear on the screen. » If the pointer has not been used for a certain period of time, it will disappear.
---	--



Precautions to Take when Using the Magic Remote Control

- Use the Magic remote control within the maximum communication distance (10 m, 32.8ft). Using the remote control beyond this distance, or with an object obstructing it, may cause a communication failure.
- A communication failure may occur due to nearby devices. Electrical devices such as a microwave oven or wireless LAN product may cause interference, as these use the same bandwidth (2.4 GHz) as the Magic remote control.
- The Magic remote control may be damaged or may malfunction if it is dropped or receives a heavy impact.
- Take care not to bump into nearby furniture or other people when using the Magic remote control.
- Manufacturer and installer cannot provide service related to human safety as the applicable wireless device has possibility of electric wave interference.
- It is recommended that an Access Point (AP) be located more than 1 m (3.28 ft) away from the TV. If the AP is installed closer than 1 m (3.28 ft), the Magic remote control may not perform as expected due to frequency interference.

6.3. Maintenance & Cleaning

For cleaning and disinfecting purposes, Resonance Technology, Inc. recommends using alcohol-free, non-flammable, and non-corrosive cleaning wipes such as SaniZide Plus® wipes on the 3D video glasses/mask. Daily cleaning is recommended.

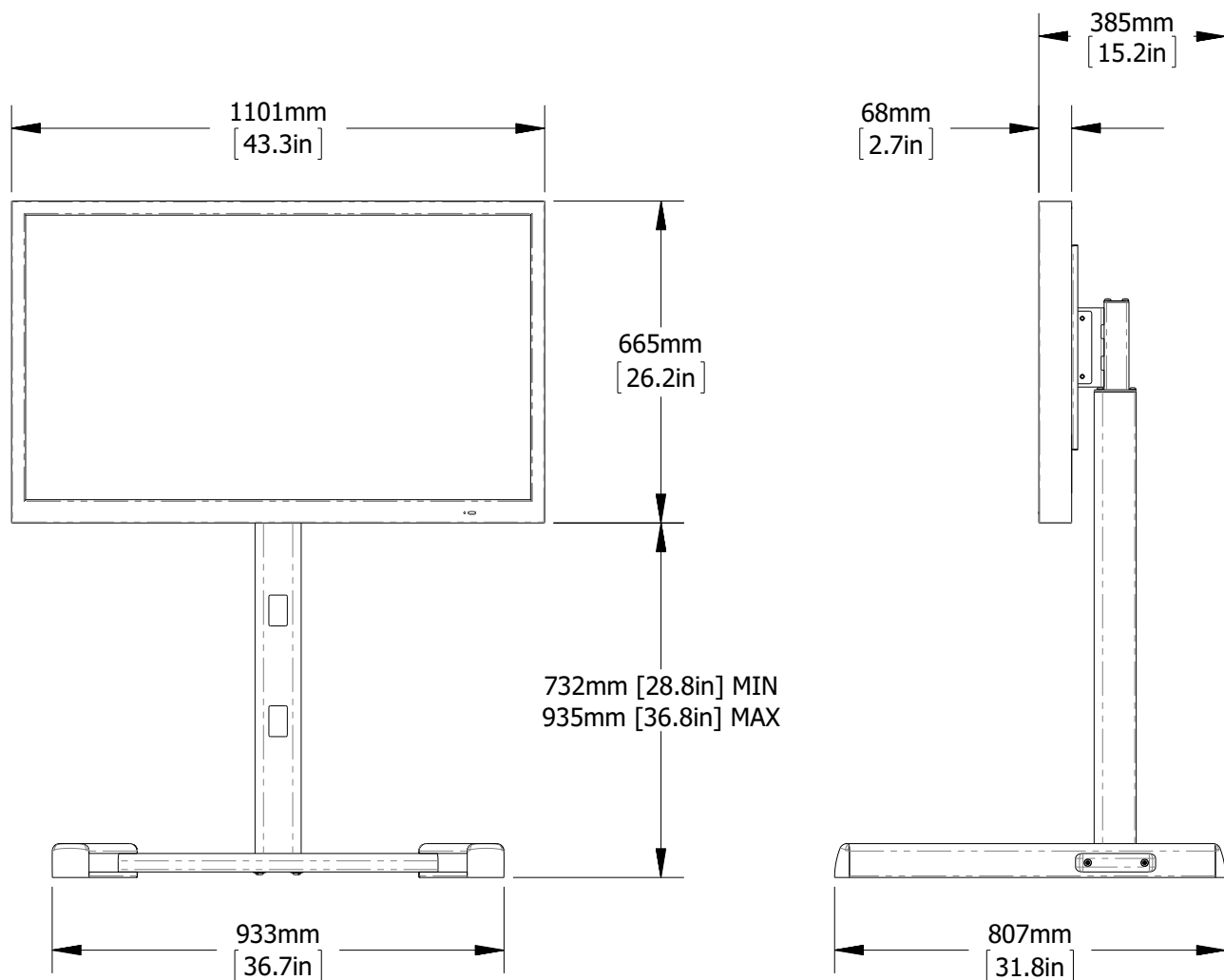
To remove dust or light dirt from the screen, wipe the surface with a dry, clean, and soft cloth. To remove major dirt, wipe the surface with a soft cloth dampened in clean water or a diluted mild detergent, then wipe immediately with a dry cloth.

Do not use any sharp objects, chemicals, or strong detergents. Do not spray liquid directly onto the monitor. Any of these actions may result in permanent damage to the monitor, or may result in malfunction, fire, or electric shock.

If you expect to leave the monitor dormant for a long time (such as for vacation), it is a good idea to unplug the power cord to protect against possible damage from power surges.

7. Specifications

7.1. Dimensions



7.2. Panel Specifications

- Panel size: 46.9" (measured diagonally)
- Resolution: 1920 x 1080p
- Response time: 240Hz
- Contrast ratio: 9,000,000 : 1 (dynamic)
- Backlighting: LED

7.3. 3D Features

- 3D type: FPR (passive)
- 3D format auto-correction
- 3D image correction
- 3D-to-2D
- 2D-to-3D
- 3D depth control: 20 levels
- 3D viewpoint control: 20 levels

7.4. A/V Inputs

- SC-type fiber optic (carrying HDMI signal, HDCP-compliant)
- HDMI (HDCP-compliant)
- VGA

7.5. Power

- Power supply input: 100V-240V, 50/60Hz

8 Troubleshooting & Support Information

8. Troubleshooting & Support Information

If you have any questions regarding the MagnetVision system use or installation, please don't hesitate to call Resonance Technology, Inc. Customer Service Department. Service and technical support staff may be reached Monday through Friday 8 A.M. to 5 P.M., Pacific Standard Time (USA) at +1 (818) 882-1997, or e-mail to support@mrivideo.com.

8 Troubleshooting & Support Information

Resonance Technology, Inc. Product Recycling Program:



Resonance Technology Inc. actively supports the protection of the environment by efficiently recycling all our electronic products. Our everyday pollution prevention activities reduce the need for electronic waste to go into landfills. At Resonance Technology Inc. we are committed to our customers, our communities and to everyone's environment. In light of the above, Resonance Technology, Inc. recommends that all our customers return their undesired, obsolete, or unused Resonance Technology, Inc. equipment to the following address for recycling:

*Resonance Technology, Inc.
Attn: Product Recycling Program
18121 Parthenia Street
Northridge, CA. 91325*

Notes